
II. *The Generic Characters of Formicaleo; with the Description of two new Species.* By the Rev. Lansdown Guilding, B.A. F.L.S. F.G.S.

Read November 20, 1827.

THE natural history of the cognate genus *Ascalaphus* was given at length in a former communication to the Linnean Society: the details of *Formicaleo* will be found equally complete, with the exception of the ova, which have not yet been noticed. It is remarkable that, after a long-continued search, not a single perfect insect has been found by me in a state of liberty, though the larvæ swarm under every rock or shed calculated to protect their pitfalls from the rain and wind; so successfully are they secreted from every enemy by their peculiar mode of resting, and the favourable colour of their bodies. No true *Myrmeleon* has yet occurred in St. Vincent. Mr. Donovan in his *Naturalist's Repository*, under the article *Myrmeleon libelluloides*, plate 139, has committed a great error in mistaking the larva of these insects, which has been so long known, for an apterous female.

The valuable characters of this family which the great French entomologist has given in his *Genera Crust. et Ins.* require some little correction. He should rather have said, *Antennæ &c. apice post mortem compressæ*;—these organs, as in the *Ascalaphi*, shrinking much when dry. *Palpi maxillares externi articulis quinque &c. . . . ultimo ad apicem acutiusculo vel obscure emarginato.*

emarginato. *Palpi labiales* articulis tribus, ultimo cylindrico vel fusiformi. *Larva* araneidiformis, prædam puteolo vel fraude captans; *mandibulis* &c. . . . tubulosis, perforatis ad succos hauriendos; *os* nullum; *abdomen* lateribus pectinatis, vel fasciculatis. *Nympha* dum nocte declaratur *acetabulum* elongatum emittens, &c.

In the larvæ of those genera of the family which dig pitfalls, we observe long and slender *antennulæ*, which are held erect, and are doubtless useful in indicating the approach of their prey by the falling of the sand: in the larvæ of *Ascalaphi* they are wanting or obscure.

INSECTA NEUROPTERA.

Fam. MYRMELEONIDÆ. *Guild.* Myrmeleonides. *Lat.*

Genus FORMICALEO. *Geoff., Leach.* Myrmeleon *Auctorum.*

Character Genericus.

Antennæ gradatim extrorsum crassiores, subarcuatæ, thoracis longitudine, articulis minutis transversis: acumine terminali minimo.

Palpi sex: *labiales* multò longiores: articulo ultimo incrassato, fusiformi.

Oculi indivisi, prominuli.

Abdomen longum, lineare.

Corpus villosulum.

Alæ elongatæ, subæquales (quiescentis) deflexæ. *Stigma* indistinctum, vel evanidum. *Neura post-costalis* medio biradiata.

Tibiæ ciliatæ. *Calcaria* duo: *tarsi* pentameri: *unguiculi* simplices.

Ovum

Larva obesa, *cavite* magno solido cordiformi: latera abdominalia

nalìa fasciculata. *Pedes* 4 antichi debiles, ciliati: postici breviores, unguiculis validissimis, ad motum retrogradum idonei.

Antennulæ filiformes, multiarticulatæ, erectæ, prædæ motus prædicandæ. *Oculi* suprâ plurimi aggregati: subtùs unicus. *Palpuli* breves, capitati, ad radices mandibularum subtùs. *Fusulus* analis, tubulo retractili.

Motu retrogrado, nunc dextrorsùm nunc fessa sinistrorsùm sæpè circulos describendo, et arenam capite complanato mandibulisque clausis ejiciendo, pedibus anticis alternatim adjuvantibus, puteolum obconicum admirabilem citò fodit. In fundo corpus sepeliens, mandibulis liberis et expansis prædam viaticam inconsciam miseram expectat. Si verò insectum lapsurum fugam atterritum quærat, arenulis emissis iterum iterumque prosternit, mox captura quasi balistæ lapidibus. Succis haustis insectorum cadavera motu capitis subitò è speluncâ jactat Leo parvulus. Adulta folliculum arenulis fusulo connexis condit, cuteque lævi internâ tegit, exuvias intùs retinens.

Nympha arcuata mandibulis in hocce stadio internè serrulatis! an ad folliculum rumpendum? Exuviæ hyalinæ. Quies brevis. Metamorphosis nocturna.

* *Pedibus brevibus, tarsi simplicibus, unguiculis mediocribus.*

1. FORMICALEO LEACHII.

F. fuscescens, flavido maculatus; alis hyalinis subfalcatis immaculatis, neuris ciliatis, oculis cupreis, pedibus pallidis.

Habitat in arenosis aridis S^u Vincentii. Quiescens antennas deprimit, ramulumque alis deflexis amplectitur, difficillimè distinguendus. Larva frequentissimè observanda, puteolo designata. Ovum et ovipositio latent.

Long. corp. 11 lin.—Expans. alar. 2 un. $\frac{2}{10}$.

In honorem amici Dom. W. E. Leach, M.D. Soc. Reg. et Linn. Socii; inter Zoologos Europæ meritò celeberrimi: qui genus hocce à tribulibus benè separavit propter trophorum differentiam.

DESCR. *Neuræ* majores interruptè diaphanæ. *Punctulum* albidum loco stigmatis. *Antennæ* sub lente villosulæ. *Thorax* flavido maculatus. *Segmenta abdominalia* posticè flavicantia. *Genitalia* hirsuta. *Palpi* maxillares externi apice emarginati, ad basin setiferi: *labiales* articulo incrassato atro.

Larva supernè nigro-fuscenscens, corpore obscurè spinuloso, capite rufescente, mandibulis hirsutis, internè validè tripinosis, mandibularum apice unguiculisque posticis ferrugineis: capitis maculis, dorsique lineis macularibus nigris: subtùs maculis lineisque abdominis irregularibus nigris: anus spinosus, spinulis et sæpè curvaturâ motum adjuvans.

Pupa villosula, nigricante-rufescens, nigro varia: membris omnibus hyalino-pallidis, oculis mandibulisque ferrugineis, ano acuminato. Frons hirsuta antennis supra oculos deflexis. Acetabulum*? cinereum, nitens. Folliculus orbicularis, operculo nullo.

** *Pedibus*

* Is not this extraordinary and regularly shaped body allied to the acetabula found in crustaceous animals before the change of the crust? and which are little stores of calcareous matter absorbed to give solidity to the integuments? In the *Myrmeleonidæ* the acetabula consist, probably, in some degree of chitine, the superabundant part of which is expelled by the pupa after its parts have acquired solidity: the centre is of a softer nature, and the crust hardened and brittle. It can hardly be a calculus produced by disease, as it is expelled by every individual of the family, as far as my observations go: perhaps it is more nearly related to the meconium of many animals. Submitted to the operation of acids,—in *muriatic*, these bodies undergo no change; in *nitric*, they are instantly dissolved with a great effervescence. In *sulphuric*, they are but slowly changed.

** *Pedibus longis, tarsi hirsutis, unguâ subtùs spinulosâ, unguiculis elongatis.*

2. FORMICALEO TARSALIS.

F. nigro-fuscens, flavido maculatus; alis hyalinis immaculatis subfalcatis, neuris interruptè nigris, stigmatè nigro, pedibus flavescentibus atro variis.

Expans. alar. 1 un. 9 lin.—Long. corp. $\frac{9}{10}$ un.

Habitat in Americis Demerarâ? Vidi exemplum siccum.

DESCR. *Facies* pallida: *vertex* atro signatus: *antennæ* flavescentes, atro fasciatæ: *pedes* hirsuti, atro maculato-punctati.

changed. In the flame of a candle they burn to a coal, with very slight bubbling, giving out the peculiar smell of animal bodies exposed to fire. Alcohol slightly softens them.

The repagula of the *Ascalaphi* are only affected by *sulphuric acid*, which immediately dissolves them as well as the ova with considerable effervescence.